

## CLAIMS

1. A solid freeform fabrication system for producing a three-dimensional  
10 object, comprising:

a dispensing system adapted to separately dispense build material and support material, wherein the build material and the support material are adapted to contact one another at an interface after being dispensed; and

15 a curing system adapted to harden the build material after being dispensed but before the support material is dispensed, wherein mixing between the build material and the support material is inhibited at the interface.

2. A system as in claim 1, wherein the dispensing system includes an ink-jet printing dispensing system.

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3. A system as in claim 1, wherein the dispensing system is adapted to dispense build material before support material.

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4. A system as in claim 1, wherein the dispensing system is adapted to dispense support material before build material.

5. A system as in claim 1, wherein the curing system is also adapted to harden the support material after being dispensed.

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6. A system as in claim 1, wherein the build material is a UV curable material and the curing system is a UV curing system.

7. A system as in claim 1, further comprising a milling system adapted to mill the build material after being dispensed but before being hardened.

8. A system as in claim 7, wherein the milling system is also adapted to  
5 mill the support material.

9. A system as in claim 8, wherein the milling system provides a first waste stream for removing excess build material, and a second waste stream for removing support material.

10 10. A system as in claim 7, wherein the dispensing system, the curing system, and the milling system are present on a common printing carriage.

11. A system as in claim 10, wherein the printing carriage is configured  
15 for unidirectional printing.

12. A system as in claim 10, wherein the printing carriage is configured for bidirectional printing.

20 13. A system as in claim 1, further comprising a build platform configured to support the build material and the support material, said build platform also being configured to be lowered with respect to the dispensing system upon application of build material or support material.

25 14. A system as in claim 1, further comprising a build platform configured to support the build material and the support material, said dispensing system being configured to be raised with respect to the build platform upon application of build material or support material.

30 15. A system as in claim 1, further comprising a heating system configured to modify the temperature of at least one of the build material and

the support material while within the dispensing system, thereby improving jettability of at least one of the build material and the support material.

16. A system as in claim 1, wherein the dispensing system is further  
5 configured to dispense the build material at a height that is offset with respect to the support material.

17. A method for producing a three-dimensional object, comprising:  
dispensing a build material;  
10 dispensing a support material, wherein the build material and the support material contact one another at an interface after being dispensed; and  
curing the build material after the build material is dispensed but before the support material is dispensed, wherein mixing between the build material and the support material is inhibited at the interface.

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18. A method as in claim 17, wherein the step of dispensing the build material is by ink-jet printing.

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19. A method as in claim 17, wherein the step of dispensing the support material is by ink-jet printing.

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20. A method as in claim 17, further comprising the step of curing the support material after the support material is dispensed but before additional build material is dispensed.

21. A method as in claim 17, wherein the step of curing is by UV curing.

22. A method as in claim 17, further comprising the step of milling the build material after being dispensed but before being cured.

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23. A method as in claim 17, further comprising the step of curing the support material in preparation for dispensing additional build material.

24. A method as in claim 23, further comprising the step of milling the support material after being dispensed but before being cured.

5        25. A method as in claim 23, further comprising the step of dispensing additional build material such that contact between the support material and the additional build material occurs at a second interface.

10      26. A solid freeform fabrication system for producing a three-dimensional object, comprising:

means for separately dispensing build material and support material, wherein the build material and the support material are adapted to contact one another at an interface after being dispensed; and

15      means for hardening the build material after being dispensed but before the support material is dispensed, wherein mixing between the build material and the support material is inhibited at the interface.

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